



Constellation-X Mission Update

- Overview Jean Grady

- Technology Roadmaps Diep Nguyen





Events Since Last FST Meeting (5/04/01)

- Presented Annual Report to Code S AA May 2001
- Presented Basis of Four-Satellite Concept to Code S AA August 2001
- Revised Technology Development Roadmaps –
 May through October 2001
- Technology Planning Meeting October 2, 2001
- Presented Technology Roadmaps and Critical Technology Development Milestones to Paul Hertz/NASA HQ – October 29, 2001



Critical Technology Development Milestones

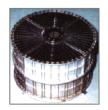
Critical Technology Milestones define focus and priorities for Constellation-X technology development and provide visibility for HQ/OMB

\langle	Spectroscopy X-ray Telescope (SXT) Optic Engineering Unit	1Q FY04
\Diamond	Small X-ray Calorimeter Array	3Q FY04
\Diamond	Flight Representative Lightweight Grating Substrates	4Q FY04
\Diamond	Hard X-ray Telescope (HXT) Optics Demonstration Unit	4Q FY04

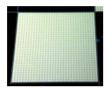


Constellation-X Summary Technology Roadmap





X-ray **Calorimeters**



Cryocoolers

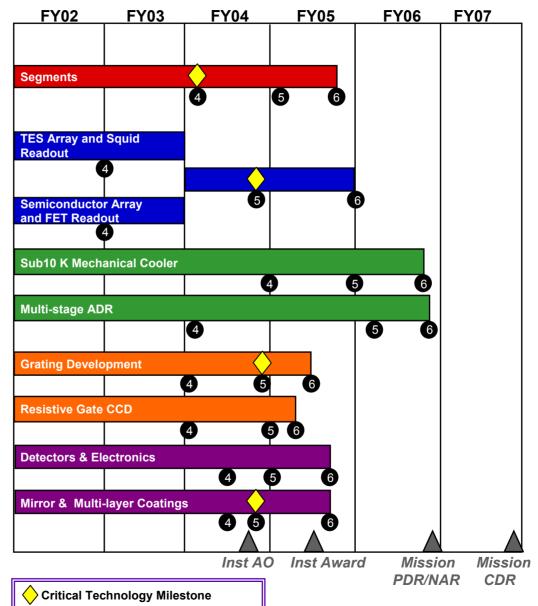


Grating/CCD



Hard X-ray **Telescope**





Technology Readiness Level (TRL)



Budget Summary

(Real Year \$M)	FY02	FY03	FY04	FY05	FY06	FY07
TECHNOLOGY DEVELOPMENT	5.4	10.7	10.8	12.2	7.5	
SXT Optics	3.7	5.6	5.8	6.5	6.7	
X-ray Calorimeters	1.0	2.7	2.2	2.5		
Gratings/CCD	0.3	1.5	1.5	1.8		
Hard X-ray Telescope	0.3	0.8	0.8	0.5		
CryoCooler/ADR			0.6	0.9	0.8	
PROJECT MANAGEMENT	0.4	0.4	1.1	1.2	2.2	4.0
SCIENCE	0.1	0.3	0.3	0.5	0.6	0.8
MISSION STUDIES	0.4	1.2	5.0	9.8	14.1	0.0
Pre-A	0.4	1.2				
Phase A			5.0	3.8		
Phase B				6.0	14.1	

TOTAL	6.4	12.9	18.8	38.7	84.2	191.6
GUIDELINE	6.4	12.9	18.8	38.7	51.3	140.0
"Preferred" submitted 5/01	6.4	10.9	18.3	33.9	84.2	191.6

% Contingency 1% 3% 0% 0% 4% 23%

Nov 15, 2001



Budget Assumptions and Issues

Assumptions

- Technology development leverages off other (non C-X) funding sources
 - Cross Enterprise (ADR, X-ray Calorimeter)
 - TPF common Cryocooler technology development
 - SR&T (Hard X-ray Telescope, X-ray Calorimeter)

Issues

- Minimal, if any, contingency funds available for formulation activities
 - Adds risk to meeting Critical Technology Milestones
- Funding in FY04 and FY05 marginal to fully support following activities:
 - FY04: Start of Mission Phase A and build-up of mandrel production facilities, while continuing technology development
 - FY05: Flight instrument award, start of Mission Phase B and SXT mandrel production
- FY06 and FY07 "guideline" well below requirement for FY07 New Start



Organization and Staffing Update

Organization

- Constellation-X moved into Flight Projects Directorate in October, 2001
 - Part of new SEU Program Office Code 490

Staffing

- Diep Nguyen joined C-X team in July as Instrument Manager
- Kate Hartman joined C-X team in November as Technical Manager
- Kay Deere replaced Anna Montoro as Administrative Assistant in October
- Pam Trance replaced Dino Fasce as Resource Analyst in October

Nov 15, 2001

Constellation

Summary

- Technology planning process productive
 - Revised technology roadmaps in place
 - Critical technology milestones defined
- Technology work already ramping up
- Project has transitioned into Flight Projects Directorate and is staffing up
- Mission definition continuing to be refined
 - Fixed-bench, four-satellite concept remains robust